

# The Planters' Chronicle.

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## THE U. P. A. S. I.

(INCORPORATED.)

### Contents.

We publish, what is to be hoped, the best of many letters on the subject of Labour, which we trust will lead others express their opinions in our columns. Any and every suggestion will be welcomed that may assist the Labour Committee in their endeavour to finish out a workable scheme to lay before the U. P. A. S. I. at their next meeting.

The Scientific Department contributes a useful article on various subjects.

Bangalore notes are published with a hope that they will inspire others from planting centres to inform our readers of what is going on in their districts.

The Coffee Convention held in New York is becoming a powerful factor in the States, and in a single year has more than doubled its membership and is attracting much notice. It is a noticeable fact that while coffee prices rise high, the consumption falls off. It is the poorer classes who are the consumers and the customers of the producer. The rich don't feel it.

Rubber takes up a good many pages but this is only natural considering how large a space this industry has assumed in planting life now-a-days. By experiment only will be found the best way to prepare rubber for the market—never forgetting that the tastes of the purchaser must be consulted. Dr. Haber's report, which will be concluded in our next issue, covers a large amount of ground and cautions, and in the next issue will appear Export, Labour Recruiting, and the Future of the Plantations.

Mr. Koenigsberg, Economic Botanist, has asked us on his behalf to thank sincerely those members of the association who allowed him to contribute the surplus Tea and Coffee Exhibits to the very poor at the Christmas Fête.

The planters of the Kidar District will be pleased to hear that there is every probability of the roads in their district being vastly improved in the near future. A high official is bringing to the notice of the Government the deplorable and in some cases dangerous state of some of the roads. A motor will prove the *dens ex machina*.

## CORRESPONDENCE.

**The Labour Question.**

Dear Sir,—What is being done to solve this question? I have read the different resolutions of the District Associations on the Registration Scheme without gaining any idea as to what their intentions are. It appears to me that the onus of producing a workable scheme satisfactory and acceptable to all Districts, has unfairly been thrown on to the shoulders of the Labour Committee, without any suggestions from any one so far as I can gather to help them, and in the hope of getting independent ideas and hints that may lighten their onerous burden. I hope you will throw open your valuable columns and invite discussion. Some valuable flash of light on this thorny subject may escape from some inspired pen which the Labour Committee may seize on and lick into shape. Every planter in Southern India is interested in this subject, and every planter's mind should be bent on assisting by every means in his power, in overcoming a growing evil. In my opinion the future path of the planter is beset with perils and disaster, if this question is not faced—and at once. Where two or three are gathered together this Labour question is a topic of conversation; and instead of hole and corner discussions, I believe it would be better to give vent to our ideas or thoughts in the *Chronicle*. What should be everybody's business is apparently nobody's business. You will perhaps excuse me, Sir, when I say that the pages of your paper, prove you to be an adept in picking other men's brains, for beyond the valuable papers of the Planting Expert, what is there original in it? Why not, then, use that talent in extracting original or helpful ideas from our brother planters on this vital topic? As no one will open the ball, I will perform the functions of the whetstone. I may be sacrificed in the process, but if good comes of it I shall not have suffered in vain.

Two leaderettes have appeared in the *Madras Times* and the *Madras Mail* under the heading of "Madras and F. M. S." and "Coolies Savings," respectively, which have not attracted the attention they deserved. The former article tells us that "according to the Census of 1911 no less than 172,465 coolies were Indians (largely recruited from this Presidency)." Labour, mind you, that ought to be employed in their own country and not be allowed to emigrate. The Federated Government thoroughly appreciates the value of Indian labour and offers alluring inducements," by giving free passes, and the Emigration Committee received from their Government \$150,000 to enable them to pay a recruiting allowance of \$5 for each labourer imported. "Consequently 78,000 Indians emigrated in 1911 against 59,300 in 1910" and prospects are daily becoming better. With more rubber land coming into bearing, more coolies will be required, and therefore increased emigration. The *Madras Mail* advocates advertising, and points out how the Recruiters taking advantage of Government Reports, advertise the coolies savings. To reduce emigration to the lowest limits compatible with the retention of a plentiful supply of labour for South India, an appreciable rise in wages and advertising must go hand in hand. For the latter we must look to Government for help for reliable information. It will be in the remembrance of all that at the U. P. A. S. I. meeting of 1910, Mr. Aylmer Martin made these points—a rise in wages and advertising—the principal theme of his recommendations. If that gentleman does me the honour to read this he may well say "By God that's my thunder" but knowing that he has this question much at heart, I feel sure that he will forgive a convert, however puny, to his views.

Yours faithfully,  
FUNGAR VICE COTIS.

## THE SCIENTIFIC DEPARTMENT, U.P.A.S.I.

*Use of Ammonia in Rubber Tapping.*—A short time ago an article appeared in the *Chronicle* on the subject of the use of Ammonia and Carbonate of Soda in tapping Hevea (Vol. VII, p. 671). This elicited an enquiry as to the relation of the metric weights and measures in the article to ounces. It appears that 0·83 of an ounce of 17% Ammonia alluded to in the article will be required to mix with one ordinary beer bottle of water which measures one-sixth of a gallon, equal to 37 ounces of water. My correspondent suggests that it might serve a useful purpose to publish a few common tables for the benefit of non-scientific men. As he remarks "we few of us have ounce measuring glasses or imperial pints but we can all raise a tablespoon and an empty beer bottle."

It is hoped therefore that the following tables may be found of use :—

## LIQUID MEASURES.

60 minims (drops)	1 dram.
8 drams	1 ounce.
20 ounces	1 pint.
8 pints	1 gallon.

(The publican's pint = 15 ounces).

## ROUGH AND READY MEASURES.

1 teaspoonful	2 drams.
1 dessert-spoonful	4 drams.
1 table spoonful	1 ounce.
1 tumblerful	$\frac{1}{2}$ pint (Imperial).

## TO MAKE SOLUTIONS OF GIVEN STRENGTH.

% solution	1 fluid ounce in	10 Imperial pints.
1% "	1 "	5 "
5% "	1 "	1 "
10% "	2 "	1 "

## EQUIVALENTS.

1,000 grammes	1 kilogramme	2·2 lbs.
1,000 cubic centimetres	1 litre	0·22 gallons.
1 gallon	"	154 litres.
1 cubic centimetre	"	0·035 fluid ounces.
1,000 centimetres	1 metre	32·8 feet.
1 foot	"	30·5 centimetres.

*Coffee Extracts.*—Some time ago I was asked by a Correspondent how to prepare Coffee Extract. *Allen's Commercial Organic Analysis*, Vol. VI, (1912) contains the following information on the subject :

"Coffee extracts are prepared with limited success by subjecting roasted coffee to treatment with boiling water or steam and adding the volatile products to the aqueous solution. Generally the product is deficient in caffen and does not contain all the extractive matter of the coffee, nor when

diluted with the appropriate amount of water is the colour the same as that of freshly prepared liquid. To remedy this defect caramel is often added, together with strong alcohol, as a preservative. In one patent addition of chicory and sugar is prescribed."

This relates to legitimate extracts, but many of the so-called extracts on the market contain no coffee at all, or very little, and are manufactured from low grade roasted and extracted Cereals.

*Lime as a Soil Antiseptic.*—In the Agricultural Section at the recent Meeting of the British Association of Glasgow, Dr. Hutchinson read a paper showing that Lime is found to act as an antiseptic in the soil and to produce similar sterilisation effects to those produced by heat which were described in the *Chronicle*, Vol V, pp. 122, 147, 608. It first of all kills many of the protozoa which feed on bacteria, and later on there is in consequence a marked development of bacteria and rapid increase in the production of plant food. In another paper by Dr. Hutchinson, experiments on Nitrogen assimilation were described. Any plant residues added to the soil cause bacterial assimilation of Nitrogen and sugar causes very marked assimilation especially at high temperatures.

*Restrictions on the Importation of Plants into South Africa.*—

The following information has been distributed as a circular by the Union of South Africa Department of Agriculture:—Nurserymen with South African customers are hereby respectfully informed that plants, excluding bulbs and seeds, are admitted into the Union from overseas only under special permit. Permits are not given at all for Conifers, or for Eucalyptus, or Acacia trees. They are freely given without regard to quantity for house Palms, Ferns, Carnations, Geraniums (*Pelargoniums*), Chrysanthemums, Orchids, and many other tender plants; but are given only for ten plants of a variety in the case of ornamental shrubs. While for fruit-bearing plants and roses, and for trees in general, they are given only for varieties that are not procurable in the Union and that cannot be grown from seed, and for not more than ten of a kind. It is desirable that nurserymen refrain from filling any order in the absence of knowledge that a permit has been issued, or is practically certain to be issued, with respect to it. Applicants are supplied with permits in duplicate so that one copy may be sent with the order. Labels and invoices should invariably give the varietal names of trees, shrubs, Roses, climbers, &c., as otherwise the inspectors may not be able to connect the plants with the permits. In filling orders for the latest varieties of Roses, and orders for other plants for which customers may say they are unable to get permits in advance of ordering owing to their not being able to give the varietal names, it is advisable to send to the customer a list of what varieties will be supplied a week or two ahead of despatching the plants. This action would admit of the customer getting a permit before the plants arrive, and thus perhaps avoid serious delay in the delivery of the consignment.

*Scientific Assistant for Mysore.*—The Council of the Mysore Planters' Associations have decided to provide the Scientific Assistant for Mysore with his own laboratory at his bungalow, Goorghully, and work will be at once started on the fittings and necessary arrangements. The establishment of his laboratory will very largely increase Mr. Frattini's efficiency as he will now be independent of headquarters and able to undertake research work in connection with Mysore problems actually on the spot.

R. D. A.

**BANGALORE NOTE<sup>o</sup>.**

The cold weather in Bangalore is proving this year exceptionally cold and many are the laments that the bungalows have no fire places. The lowest minimum attained during December was 54.5° F. on the 17th and the highest maximum 79° F. on the 2nd. There has been no rain throughout the month despite several cloudy days, but the station is still several inches over the annual average for the year.

During the month several planters have called at the Office of the U. P. A. S. I. Mr. J. G. Hamilton, the Life Planting Member, has just returned from home. He has spent a considerable part of his holidays in Africa where he saw Mr. F. M. Playfair on his new estate near Naitobi. Mr. Hamilton had much of great interest to tell about this country which is indeed a wonderful one. The coffee is grown without shade on undulating land on which a plough can be used. It has a small bean but gives enormous yields. At present there are no diseases and no manures are used, but the time will undoubtedly come when both will have to receive attention. Labour appears to be a difficulty, and it is a rough life for 'master' as compared with India. He gets land from the Government and nothing else and has to put up his own house and break open the land himself, and not only superintend other people doing it. From all accounts it is a great country for a young man with a little capital, not afraid of really hard work.

The recently passed Bye Law relating to Weights and Measures in the Civil and Military Station will be given effect as early as possible. This introduces the Pound as the standard weight and the Quart as the standard measure.

Prof. Rudolf of the Indian Institute of Science delivered the Inaugural Address of the South Indian Association in Madras on 4th December. During the course of his address he referred to a number of industries which might be taken as examples of the direction in which industrial progress might be developed in India, and among others he referred to the extraction of oil, a subject the planters of Southern India have long been interested in and a Sub Committee was elected at the last Annual Meeting of the U.P.A.S.I. to deal with it together with the export of Bones. Prof. Rudolf said that the extraction of oil from seeds is an industry which, although well established in South India, was capable of enormous developments, particularly when oil pressing was joined to the manufacture of soap, and to a minor extent the preparation of candles. In the year 1909-10, oil seeds to the total value of Rs.18,72,72,959 were exported from British India and hence it was readily seen that there was ample raw material for an industry. In fact oil seeds appeared to form in value one fifth of the local exports from this country. Practically the whole of these oil seeds were used for the production of oil, oil cake being obtained at the same time. Several oil cakes, such as castor, were useful as a valuable manure, others, such as linseed, for either manure or cattle food. Whether all or a portion could be exported economically were questions which remained to be solved.

The making of glue from skins, horns, bones, etc. was in Europe a profitable business, but at present the greater portion of the glue used in India, and especially all that of good quality appeared to be imported, and there was apparently no good reason why with the use of a suitable plant glue making should not prove a paying minor industry as there were really no unsurmountable difficulties in the manufacture, although he understood that industrial experiments in this direction made in Madras had not proved a success, probably from want of technical skill.

Paints sold in India were ready mixed for use, and it seemed an extraordinary thing that the seed from which oil was pressed should be exported from India and much of the oil returned as a main constituent of ready mixed paints. A paint and varnish factory which would employ the necessary technical skill and take the trouble to acquire a good name would probably do extremely well in South India.

The Rt. Hon'ble Sir John H. A. MacDonald in a discourse delivered at the Royal Institution of Great Britain early in 1912 stated that there were no fewer than 200,000 motor vehicles upon the roads in Great Britain in 1911, and in that year of the 500,000 horses that were used formerly in London alone, 420,000 had disappeared from the streets. The use of motors is spreading everywhere and they are rapidly becoming common in quite out of the way planting districts. In Bangalore there are now said to be at least 100 cars. In the discourse referred to above Sir John had much of interest to say about the making of roads and the lessons taught by Macadam. The wise precepts of the latter are now often disregarded and it is forgotten that water is the enemy of the road. Have these precepts ever been learned in some districts in South India?

At the Christmas Fete lately held one very noticeable feature was the collection of buffaloes, milch cattle and bullocks. They deserved and attracted much attention. The fine Anurhat Mahal cattle, which drew eulogistic praise from the great Duke of Wellington, were well represented. One pair was valued at Rs.1,200. It is to be hoped that the Mysore Government will not neglect these fine draft cattle, but keep up the establishment at Hunsur.

The great Violinist, Miss Marie Hall, will have paid Bangalore a visit by the time this paper is out and as she has a world wide reputation, the Bangalore public will have enjoyed a treat that may not seen occur again. Such a treat has to be paid for, but the Bangalore people think they have to pay "too dear for their whistle" (or violin in this case) forgetting that artists of repute will not cater for their instruction and amusement, at the same prices that rule in the West.

Still travelling companies should remember that the Pagoda tree no longer thrives in the East. It is like the barren fig tree.

The military are still conspicuous by their presence in the Station, as their manoeuvres have been stopped on account of the transfer of the Mule Corps to Burmah, for even in mimic war, the soldier must be fed. The break down of the Turkish Commissariat has much to answer for in the present war.

One of the chief amusements for some time past has been a Skating Rink which was much patronized by the general public, but this innocent and healthful form of exercise has lately been closed to them Messrs. Spencer & Co., whose enterprize seems never ceasing, have taken over the room and added it to their business, but it is in contemplation to open an open air rink at the top of the Maidan if the land can be procured from the authorities.

• A great musical treat is also in store for Bangalore during Lent when the "Crucifixion" is to be performed at St. Mark's Church. The vocal talent of the Station has been enlisted, and a choir selected from all the churches will support the soloists.

The office of the United Planters' Association of Southern India now form quite a noticeable feature of the South Parade, as brass tablets have been affixed to the outside walls and through the kindness of Mr. Krumbiegel, Economic Botanist, new foliage plants have been added, which give the office quite a spruce appearance.

## COFFEE.

**Convention of Coffee Roasters in New York.**

The *Spice Mill* in an Extra Number devoted to the second Annual Convention of Coffee Roasters held at New York gives a very interesting account of this meeting. It was also at the beginning called this Pure Food Association but this latter designation has been dropped. Though it is an American Institution there are subjects that will prove interesting to coffee planters in Southern India, and bear the brand of common sense.

The third article of the constitution reads "To assist in the enactment and enforcement of uniform Pure Food Laws which in their operation shall deal justly and equitably with the rights of the consumer, and the trade" with which Dr. Doolittle, Acting Chief, Bureau of Chemistry, U. S. Department of Agriculture spoke in its application to coffee. In his papers on the subject "Throughout the countries of the civilized world there is a well-defined movement for the conservation of public health, and the furthering of the cause of physical well-being. An important feature of this health propaganda is the enactment of laws governing the production, distribution and sale of food products. Our schools and colleges and various departments of state and national government are doing much to solve some of the educational problems by giving scientific and practical information for the production, proper handling and proper preparation of foods to secure their maximum food value. In the commercial world competition is said to be the life of trade. This is true of the honest competition, a contest where on the two sides we have alertness and energy guided by honesty and integrity. But it is not true of the unequal struggle where honest unadulterated products must compete with dishonest, sophisticated ones. Nearly every food product, and especially those submitted to manufacturing processes, have at one time or another been more or less sophisticated. Coffee is no exception to this rule. In fact when we recall to mind the various manipulations and misrepresentations practised in connection with this commodity, we find they cover practically every form from innocent misrepresentations as to quality, to the addition of poisonous and deleterious substances."

The Food and Drug Act provides, in case of foods, that an article shall be deemed to be adulterated,

- I. if any substance has been mixed or packed with it so as to reduce or lower or injuriously affect its quality or strength,
- II. if any substance has been substituted wholly or in part for the article,
- III. if any valuable constituent of the article has been wholly or in part removed,
- IV. if it be mixed, coloured, powdered, coated or stained in a manner whereby damage or inferiority is concealed,
- V. if it contain any added poisonous or other deleterious ingredients which may render such article injurious to health.

"It would almost seem as though the framers of this Act had in mind the various forms of sophistication that coffee has been subjected to when they prepared these definitions."

The Doctor continues elsewhere "Thus a mixture of ground coffee and chicory, which would be adulterated if labelled and sold as coffee would not under the terms of the Act, be considered, adulterated or misbranded if labelled in a manner to show that it is an imitation plainly stated on the package, or in a manner to plainly show that it is a compound of coffee and

chicory; and the word "compound" is plainly stated on the package. In this connection it should be noted that the higher courts have held in two instances that the word "compound" was not sufficient, and that the product must also be labelled in such a manner as to plainly show that the same was a compound. In other words, that the ingredients of the compound should be stated on the package. The Act itself defines the term "blend" as a "mixture of like substances," and it should be noted that a mixture of coffee and chicory is not a blend, although numerous instances of this form of labelling have come to the attention of the Department. The statement is often made on the labels of these products that they contain small amounts of chicory, when as a matter of fact they contain large amounts: also, that the chicory is used to bring out the true flavour of the coffee, when as a matter of fact, it is only used for the purpose of cheapening the product, or producing a distinctive flavour."

Dr. Doolittle further remarked "how the world at large benefited by this Pure Food and Drug Act and in it has extended together products, until to day we actually have a national Pure Seed and Plant Law" and in these days when many members of the Planting Community advocate advertising the advantages of home labour for the world be emigrant the following words will find a ready and acquiescent welcome—though specially referring to coffee the words are of universal application. Dr. Doolittle ended an eloquent speech in these words:—

"But there is a form of misrepresentation of food and drug products, that is not covered by the Food and Drug Act, that I should like to call attention to briefly, a form of misrepresentation that every person should take an active part in suppressing. I refer to dishonest advertising. Advertising is one of the most powerful forces of modern business. In one form or another it rules practically every man, woman and child in our land, and educationally cannot be over-estimated. Now what shall be the effect of so powerful force in our land? Shall it create confidence in our fellow man and uphold the health and happiness of our people, or shall it continue, as it has done in the past, to create suspicion of our fellow man, and undermine the health and morals of our people? This is a vital question for the people of this country and I want to tell you that every dishonest advertisement nullifies the effect of every honest one." With but a slight change in words the sense of them applies to this country.

A few extracts from the report in the *Spice Mill* of the Delegation that went to Brazil will be of interest to Coffee Planters in Southern India. The whole report is of great interest but is too long for reproduction, so only the most salient points can be extracted. Mr. Lewis read the report from which the following are taken: "The cost of production, of course, varies. Labour is cheap. The care of plantations is comparatively easy. Crop making is a long and tedious proceeding, and so is the handling of the berry from the tree to the market. Someone gave us a rough estimate of 4c. per pound as cost of production, which does not include interest on investment. However we cannot vouch for this figure. Plantations that are operated seemed in the pick of condition. The trees were well cared for and the ground kept clear of weeds. Equipment on the plantations we visited was very complete, even elaborate, and all improvements were in excellent repair. In short, the condition of the planter on the present basis is very satisfactory, and the business of raising coffee is profitable. Plantations are valued by the number of trees, which are set 13 feet apart, and an average fair valuation is \$ 5000 or \$1'65 per tree. But in travelling through the country we noticed a great many abandoned plantations, abandoned in the years of low prices, and never reclaimed. These changed hands: because the owners were simply unable to hold them. The



realized worth of a crop at that time did not even pay the operating expenses. Incidentally interest rates soared. Plantation loans during that period were rated as high as 17 per cent, and the borrower was obliged at that to pay 3 per cent. commission for placing the loan. Thus many were obliged to give up their property. The Delegation to Brazil is of opinion that conditions at that time were so near universal bankruptcy as to fully justify the Government in the various steps it took for the protection of its principal industry. It believes also that the same Government is now earnest in its profession of interest that coffee is too high and that it would be for the interest of all Brazil included, if a lower level of prices is soon reached." "When coffee was cheap it supplanted tea in many American homes. This situation is likely to be reversed if present conditions continue." The following account of the countries where coffee is drunk and their quantities is taken from Mr. Theobald's "abundant" speech. "Now the great coffee drinking people of the world are the pliegin' races of the North and the United States, the people of which drink about ten pounds per head every year. There is Belgium, a pretty thriving country, with fifteen pounds; and Germany with six pounds; the Netherlands, they are pretty good people, with sixteen pounds; Norway, another pliegin' country, with twelve and a half pounds; and Sweden, another Northern race, drinking almost sixteen pounds; the English, a tea-sipping people, with two pounds."

Mr. Herman Sileoan speaking of Valorization said:

"As far as Sao Paulo Government is concerned, when they entertained the question of valorization, they never expected to make money out of the scheme. They expected that the State of Sao Paulo would have to make a large sacrifice, two to four millions sterling in order to enable them to help their planters. The last ten years, 1906-10 they lost a great deal of money on the valorization scheme. You know in 1906-7 the market steadily went down and in 1907-8 it recovered very slightly, and in that whole four years 1906-10, the article ran down as it had been for ten years previous, some when between five and eight cents a pound on the basis of option. No large profit by the State of Sao Paulo was made by them, because when I was asked to make a valuation of the coffee for the bankers for the loan, I said I then coffee at \$8 a bag and I was sure that it was to be sold under the farmer and there were less than one million and it required a surtax to make it. Loan a scheme together with the guarantee of the Federal Government. No profit was in that \$8 and the sales had only realized \$7 to \$10 a bag. The Sao Paulo Government were most anxious to sell in 1906-7 in large amounts but they would not without great difficulty. Therefore, when the weather changed, and the market went up they made a better showing in their crops, and the operation immediately arose: "Why didn't you sell it all when it was your time to sell it?" In going to this valorization scheme, the Sao Paulo Government didn't intend to put the price up, nor did we, who were in with them, help them to do so, because all our advances were based on the down basis, not on the higher. We believed the change would be from seven cent down, not from seven cents up. They wanted to protect their planters from prices so low as to mean ruin. It was not a question of the profit. When they are making to day a better showing, von Gentlemen, here or elsewhere, ask: "Why don't you sell now?" The State of Sao Paulo pass out and the Committee with them and the coffee should be sold so much a year and in cases crops were small and the trade demanded it, double that operation. The State of Sao Paulo didn't want the prices so low and they did not wish the prices so high; therefore, as we are now in a season of small crops, they could not help it.—*The Spice Mill.*

(To be continued.)

## RUBBER.

### Acetic Acid Coagulation.

In recent issues of the *India Rubber Journal* two interesting articles on this subject have appeared, written by Dr. P. Schidrowitz and Mr. H. A. Goldsbrough, containing the results of their experiments on the influence of varying quantities of acetic acid on one and the same batch of fresh Hevea latex regarded from the standpoint of the quality of the rubber produced as gauged by the ultimate test of the manufacturer, namely that of vulcanization.

These experiments were carried out in the Federated Malay States on latex derived from a considerable number of trees, one half of which were about six years old and the remainder ten to twelve years old; the bulked latex represented that from trees of an average of eight to nine years. Equal volumes of this latex were treated with different quantities of acetic acid and the resulting sheets of rubber, all prepared in the same way, examined. The less acid used the more these sheets had a tendency to develop moulds.

The acidity of the sheets was first studied and it was found that, "whatever the technological significance of 'free' acid may be, it seems reasonable to infer that, at any rate from mature latices from certain districts, by appropriate methods of preparation sheet and *a fortiori* crepe rubbers of a very low degree of acidity can be obtained. Secondly the figures indicate that an increase of the quantity of acid used in coagulation, even when beyond that ordinarily employed as a maximum in practice, does not, or perhaps, as the method of preparation may not be without influence in this connection; we had better say *need* not increase the amount of free acid in the finished rubber."

The absolute quantities of free acid are decidedly higher for the rubbers from young trees than in the case with the older rubbers. What the effect of mould formation on quality may be is still a moot point, but manufacturing tests showed that a moderate mould development is not necessarily of a serious nature. No doubt, however, the important factors in this connection are the type of mould and the extent of its development.

Vulcanisation tests and observations on the rapidity of cure showed that the rubbers coagulated with the smallest amounts of acetic acid were in both cases the best.

These experiments lead to the important conclusion that, "the quality of the rubber is in inverse ratio to the amount of acetic acid employed during coagulation, and this fact is quite apparent whatever method of judging is applied."

A series of similar experiments were carried out with latex from young trees and though the results obtained were not so satisfactory the same general result was observed, viz. that the sample prepared with the smaller quantity of acetic acid gave the best results.

The articles close with the following general remarks on the results obtained:—

"Within certain limits, the amount of acid employed in coagulation appears to be in inverse ratio to the quality of the rubber.

"In the case of sheet rubbers mould formation appears, again within certain limits, to be checked by the use of an amount of acid which is greater than the maximum desirable from the point of view of quality.

"Moderate mould formation, however, need not necessarily have a serious effect on quality. While we have no desire to suggest anything which might lead plantation managers to believe that mould may be neglected, and while we hold that it is in the best interests of the industry that goods should come to the market in as clean and homogeneous state as possible, it is clear that any sweeping inference as to the value of a rubber based on its appearance in this regard may be quite unwarranted by the facts.

"While there is increasing evidence in favour of the superior quality of properly prepared smoked sheet, it is apparent that from mature, properly handled plantation latices unsmoked rubber may be prepared which, as regards quality, compares favourably with the finest grades of wild rubber. To what extent these rubbers might have been still further improved by smoking is a question with which we hope to deal on another occasion."

The Governor of Pará invited Dr. Huber to make a report on the prospects of Hevea Rubber in Pará and we are able to give the first part of the summary from the *Times of Ceylon* which will be continued in our next issue.

#### Dr. Huber's Report.

##### GENUINE HEVEA IN THE EAST.

As I was able to convince myself, during my excursions in Ceylon, Malaya, Sumatra and Java, the cultivated trees in the Asiatic plantation belong incontestably to the species *Hevea Braziliensis*, which is recognised as furnishing the best quality of rubber. (Note. As the rubber tree seeds brought by Wickham from Brazil, and from which the Eastern plantations were propagated were collected on the margin of the Tapajós river in Pará, a river that sends out an inferior and weak rubber, it has been contended by most Brazilians that the trees in the East were not the true *Hevea Braziliensis*. Dr. Huber decides conclusively that the Eastern trees are the genuine kind). It appeared, however, that among the specimens originally introduced into the East, and of which there still exist possibly 60 in all, there are individual trees representing several variations more or less well characterised in the specific type. It is not surprising that the innate variability of the *Hevea Braziliensis* should be still further stimulated by the process of adaptation of new conditions of climate and of the soil and by very active propagation. And so it is that in the plantations are found many individual trees which by the exterior aspect differ more or less from the typical *Hevea Braziliensis*, without, however, it being possible to classify them in any other species of the kind.

##### PERFECT ACCLIMATISATION IN EASTERN PLANTATIONS.

Notwithstanding the extreme variability, it is not possible to speak, in the proper sense of the word, of a degeneracy in the *Hevea Braziliensis* in its new home. It is necessary to agree that the acclimatisation of this Amazonian tree in the Eastern plantations is perfect; the growth is, in general, very rapid, and the trees have in the larger part a very healthy appearance. It is true that they are subject to different parasitical troubles, in the roots and trunk, which in certain cases has caused serious loss to the plantations; but by active vigilance, it has been possible to efficaciously combat these troubles. On the other hand, the Asiatic Heveas have shown themselves free of leaf troubles, which are more dangerous than those of roots and trunk.

The culture of *Hevea Braziliensis* is an industry well-established in Ceylon, Malaya, Sumatra and Java. Plantations of the producing state also

exist in some other Asiatic tropical countries such as India meridional, Burmah, Cochin, China, in the Philippine Islands, Borneo and in Guinea. The total area planted with Hevea in the East attained at the end of 1911 to nearly 1,000,000 acres divided as follows:—

	Acres.	
Malay Peninsula ... ..	...	550,000
Ceylon ... ..	...	215,000
Sumatra ... ..	...	150,000
Java ... ..	...	125,000
Borneo and other Islands ...	...	40,000
India meridional and Burmah	...	30,000
Cochin China ... ..	...	15,000
Total...	1125,000	

This area would correspond to

15,000,000 trees.

more or less; as, however, many trees and even a certain number of plantations will not arrive at the producing stage, it may be said that 100,000,000 is the number of trees whose production it will be necessary to calculate till the year 1926.

#### PLANTATION AREA IN DIFFERENT COUNTRIES.

Notwithstanding the retardament since the end of the "boom," the extension of the plantations did not remain totally satisfactory. While in Ceylon and Java the area occupied by plantations of Hevea cannot extend itself very much owing to the topographic and climatic conditions on one hand, and to the great extension in the culture of alimentary plants on the other, in the Malay Peninsula where at present the culture of the Seringueira (*Hevea Brasiliensis*) is the preponderating industry and Sumatra whose agriculture is still in its infancy, it will be possible to easily duplicate, if not triplicate, the plantation area. The same may be said of Borneo, where, however, the difficulties of communication and labour possibly retard the development of the plantation industry. — *Weekly Times of Ceylon*.

(To be continued.)

#### COFFEE AND CACAO FROM VENEZUELA.

Among the principal articles of export from Venezuela the last two years were:—

	BOLIVARS.	
	1910.	1911.
Coffee ... ..	41,713,856	59,016,625
Cacao ... ..	17,521,938	18,659,956

*Coffee.*—In 1911 the exports of coffee were principally to the United States, 21,242,633 bolivars; to Germany, 14,183,005 bolivars; to France, 13,480,831 bolivar; to Spain 4,717,256 bolivars; to the Netherlands, 1,165,468 bolivars; and to the United Kingdom, 3,690 bolivars.

*Cacao.*—In 1911 the exports of cacao were principally to France 9,483,445 bolivars; to the United States, 3,298,747 bolivars; to Spain, 1,839,638 bolivars; to Germany, 686,452 bolivars; to the Netherlands, 303,638 bolivars; and to the United Kingdom, 113,464 bolivars.—*The Spice Mill*.